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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,132	01/11/2002	Kurt Alan Rubin	ARC919990196US1	5831
35987	7590	03/31/2004	EXAMINER	
JOSEPH P. CURTIN 1469 N.W. MORGAN LANE PORTLAND, OR 97229			FIGUEROA, NATALIA	
			ART UNIT	PAPER NUMBER
			2651	
DATE MAILED: 03/31/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/042,132

Applicant(s)

RUBIN ET AL.

Examiner

Natalia Figueroa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-19 and 23-26 is/are rejected.
- 7) ☒ Claim(s) 7-9 and 20-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/11 January 2002</u> .   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-6, 10, 14-15, 17, 23-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al (USPN 6,421,195) in view of Clifford, Jr. (USPN 5,276,566).

Regarding claim 1: Rubin et al disclose an information recording system (col. 1, line 10), comprising a storage medium having a plurality of adjacent tracks (col. 1, lines 63-64), and each of the adjacent tracks include a plurality of storage elements that are arranged substantially along each respective track in substantially a regular manner (col. 1, lines 10-14). Rubin et al fail to explicitly teach a head disposed in proximity to the storage medium and having a width that substantially spans at least two adjacent tracks.

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However, Clifford, Jr. discloses such on (col. 2, lines 12-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus as disclosed by Rubin et al with the above teachings from Clifford, Jr. to include a head that can allow to read two adjacent tracks the motivation being to avoid errors in the disk hence making sure the head is correctly centered over a track.

Regarding claim 2: Rubin et al further disclose that the storage medium is a magnetic storage medium, and the head is a magnetic head (col. 1, lines 5-8).

Regarding claim 3: Rubin et al further disclose that each track is located substantially in a plane within the storage medium, and wherein at least one storage element is a magnetic domain storage element that is substantially perpendicular to the plane in which the track in which the storage element is arranged is substantially located (col. 7, lines 21-25).

Regarding claim 4: Rubin et al further disclose that each track is located substantially in a plane within the storage medium, and wherein at least one storage element is a magnetic domain storage element that is substantially parallel to the plane in which the track in which the storage element is substantially located (col. 7, lines 19-20).

Regarding claim 5: Rubin et al further disclose that at least a portion of the magnetic storage medium is patterned (col. 8, lines 39-40).

Regarding claim 6: Rubin et al further disclose the magnetic storage medium is a perpendicular magnetic storage medium (col. 4, lines 40-42).

Regarding claim 10: Rubin et al fail to explicitly teach that each adjacent track spanned by the head has a different phase. However, Clifford, Jr. discloses such on (col. 2, lines 1-2).

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Regarding claim 14: Rubin et al further disclose that the magnetic storage medium is a magnetic disk (abstract, col. 1, line 11).

Regarding claim 15: Rubin et al fail to explicitly teach that the magnetic storage medium is a magnetic tape. However, Clifford, Jr. discloses such on (fig. 1, col. 1, lines 21-23).

Regarding claim 17: Rubin et al further disclose that the information recording system is part of a magnetic medium disk drive (abstract, col. 1, line 11).

Regarding claim 23: Rubin et al fail to explicitly teach that the head reads information from at least two adjacent tracks spanned by the head. However, Clifford, Jr. discloses such on (col. 2, lines 12-15).

Regarding claim 24: Rubin et al fail to explicitly teach that the head writes information to at least two adjacent tracks spanned by the head. However, Clifford, Jr. discloses such on (col. 2, lines 8-15).

Regarding claim 26: Rubin et al further disclose that the plurality of adjacent tracks is formed by a plurality of concentric tracks (fig. 3, 61 and disclosure thereof).

2.        2.        Claims 11-12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al and Clifford, Jr. and further in view of Hamann et al (USPN 6,233,206).

Regarding claims 11, 12 and 13: Rubin et al and Clifford, Jr. fail to explicitly teach that the magnetic storage medium has an areal density of at least about 64 Gbit/in<sup>2</sup>, 128 Gbit/in<sup>2</sup>, and 256 Gbit/in<sup>2</sup>.

However, Hamann et al disclose such on (fig. 7 and disclosure thereof, col. 8, lines 36-43). Therefore, it would have been obvious to one having ordinary skill in the art at the time the

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invention was made to modify the apparatus as disclosed by Rubin et al and Clifford, Jr. with the above teachings from Wang et al to include a magnetic structure with the necessary areal density hence providing a correct head to bit match.

3. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al and Clifford, Jr. and further in view of Lundquist et al (USPN 4,623,867).

Regarding claim 16: Rubin et al and Clifford, Jr. fail to explicitly teach that the magnetic storage medium is a magnetic strip.

However, Lundquist et al disclose such on (col. 1, lines 14-21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus as disclosed by Rubin et al and Clifford, Jr. with the above teachings from Lundquist et al to include a magnetic strip means hence making the reproduction of signals in narrow tracks more accurate and with less difficulty.

4. Claims 18-19 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al and Clifford, Jr. and further in view of Mallary (USPN 6,430,123).

Regarding claim 18: Rubin et al and Clifford, Jr. fail to explicitly teach that the storage medium is an optical storage medium, and that the head is an optical head.

However, Mallary discloses such on (abstract, col. 1, lines 8-16). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus as disclosed by Rubin et al and Clifford, Jr. with the above teachings from Mallary to have the means for an optical medium hence providing a system that can be matched to the users specifications.

Regarding claim 19: Rubin et al and Clifford, Jr. are relied upon for the same reasons of rejection as stated above. Mallary further discloses that at least a portion of the optical storage medium is patterned (figs. 1-6, col. 3, lines 3-4 and 27-33).

Regarding claim 25: Rubin et al and Clifford, Jr. are relied upon for the same reasons of rejection as stated above. Mallary further discloses that the plurality of adjacent tracks is formed by a plurality of concentric tracks (fig. 2, col. 3, lines 30-31).

#### *Allowable Subject Matter*

5. Claims 7-9 and 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 17 and 20; the prior art of record, and in particular Rubin et al (USPN 5,410,439), fails to teach or suggest an information recording system that each track has an associated along-track direction, wherein the storage elements are further arranged substantially along first and second axes, the first axis being substantially perpendicular to the second axis, and wherein the first and second axes are each locally substantially 45° from the respective along-track directions of the tracks.

#### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wang et al (USPN 6,500,497): Patterned media with high areal density. Gerard et al (USPN 4,704,711): Patterned media. Takano et al (USPN 6,356,406): Magnetic storage system.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Figueroa whose telephone number is (703) 305-1260.

The examiner can normally be reached on Monday - Thursday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
NFM

  
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